Social Security Administration
Compassionate Allowance Outreach Hearing on Cancers
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Bruce A. Chabner, M.D., Clinical Director
Massachusetts General Hospital Cancer Center

Questions:

1. What is the current state of the art with respect to diagnosing cancers in terms of biomarkers, MRIs, genetic tests etc?

Cancer is a diagnosis confirmed only by pathological examination of involved tissue. Biomarkers may suggest the diagnosis, and may help to subclassify tumors regarding stage, prognosis, or types of therapy indicated, but are not in themselves diagnostic.

2. What are the short and long-term effects of various kinds of treatment?

The side effect profile of treatments for cancer vary according to the type of treatment and duration of treatment, and may be mild and rapidly reversible, as for example the minimal side effects of Gleevec, a new treatment for chronic myelogenous leukemia. On the other hand, side effects may be severe and longlasting, as for example the multiple effects of high dose chemotherapy with bone marrow transplantation. In the latter circumstance, serious and disabling toxicities related to liver, lung, or kidney damage may last for many weeks, and may not be totally reversible.

Certain drugs may have long-lasting and disabling toxicities, such as the cardiac toxicity of adriamycin, the infertility caused by alkylating agents, and the kidney toxicity due to cisplatin. In general the longer drugs are used, and the higher the dose, the greater chance there is of long lasting and permanent damage. Many chemotherapy drugs increase the risk of late leukemias, especially the alkylating agents that are frequently used in bone marrow transplantation and treatment of cancers arising in the blood forming tissues, such as multiple myeloma and lymphocytic leukemias.

The long term disabling toxicities tend to be infrequent, but may include serious damage to virtually any organ system in the body, including the lung, heart, liver, kidneys, and bone marrow. Even brain function may be adversely affected by such treatments as irradiation or certain high dose chemotherapies, and may not be reversible. Children with leukemia treated with methotrexate injected into the spinal canal to prevent or treat spread of leukemia, may experience various disabling side effects, including seizures, coma, and dementia. Other drugs, such as the vinca alkaloids used in lymphoma chemotherapy, and the taxanes used in breast and lung cancer, may cause permanent loss of function of peripheral nerves that control muscles of the hands and feet.

Biological treatments, while in general less toxic to bone marrow and gut, have highly specific side effects. Erythropoietins used to reverse anemia of chemotherapy, cause an increase in clotting events, such as stroke and heart attacks, while herceptin, an antibody

used to treat breast cancer, increases the incidence of heart failure in a small but significant percentage of patients.

Most patients, especially the younger patients who are otherwise in good health, will achieve a near normal recovery several months after cancer treatment, depending of course on the specifics of the treatment required, and the possible need for continuous or new treatments in the future. Older patients, especially those over 65, are at greater risk of permanent toxicities, particularly if they have underlying medical conditions that affect their performance status.

3. Are there "scales of severity" or other known measures that can help SSA assess the impact the disease may have on the ability to function according to SSA's standards?

There are specific systems for grading toxicity according to severity. These systems are used to grade toxicities during active treatment, but are not ordinarily applied to the post-treatment patient. For patients not undergoing active treatment, there are several different systems for grading patient function. The "ECOG" scale of 0-4 grades patient function according to their level of disability, varying from totally normal activities of daily life (0) to confined to bed some of the bed (2), to totally incapacitated (4). Similarly, the Karnofsky scale of 0-100, provides a somewhat more precise and specific description of patient's levels of impairment.

4. What is the experience of physicians or depts. of social work in filling out forms? How might it be improved? What questions should SSA ask differently?

I have little personal experience in filling out the forms. I would suggest the following questions:

a. Is the patient currently unable to carry on his/her normal work?
b. What is the specific nature of the patient's current disability?
c. Is further disability likely to result from the indicated treatment, and if so, for how long will the disability related to treatment continue?
d. Is treatment likely to restore the patient to normal work activity?

Another important consideration is that the expected duration of survival is simply an estimate for any specific patient, however any advanced (metastatic) cancer arising from the lung, pancreas, colon, stomach, or liver may be associated with a short survival of less than one year. If the patient's performance status (see above) is low (the patient is bedridden or otherwise incapacitated) at the time of diagnosis, and if brain lesions are found at the time of diagnosis, the prognosis is particularly grim, and often a duration of 3 months or less.

5. How does HIPPA impact your ability to provide us with information?

It makes the conduct of clinical trials more complex, but it does not impair our providing information to Medicare or to Social Security.

6. How are patients impacted by co-morbidities? See above
7. Can staging systems indicate very different prognoses for patients, depending on the type of cancer?

Staging, which is defined as the determination of the performance of clinical tests to determine the extent of disease, plays an essential role in the initial evaluation of the cancer patient. It provides information about prognosis (the likely chances of cure or duration of survival) and is the basis for determining what therapy should be applied. The clinical oncologist performs a variety of surgical and x-ray procedures, and laboratory tests to determine how extensively a primary tumor has grown at its local site, whether lymph nodes are involved, and what distant sites of metastases may be detected. Each of these findings has important implications for prognosis, and may determine what specific combination of surgery, irradiation, and drug therapy is indicated. In addition, a tumor of a common type, such as lung cancer, may be subclassified by sophisticated genetic tests to determine the choice of drugs that will be used. For example, in non-small cell lung cancer (the most common form of lung cancer), the presence of a mutated EGFR receptor on the surface of the tumor cells suggests that the tumor will dramatically respond to a specific class of new drugs (Tarceva or Iressa) aimed at this receptor, and may suggest a better long term outlook for this patient, as compared to a patient with the same type of tumor, but lacking this mutation. Staging schemes, designed to reflect prognosis and to indicate the need for specific treatments, may vary among different types of tumor. The presence of an elevated serum calcium or kidney failure, both incorporated into the staging scheme for multiple myeloma, confer a poorer prognosis and call for more aggressive treatment.

In general, the earlier to tumor stage, the greater the chances for cure. This is especially true for cancers arising in the breast, prostate, lung, and colon, as there is a high cure rate for small tumors confined to the initial site of disease (Stage I). Molecular profiling of the tumor may provide additional information suggesting the likelihood of cure with surgery alone. If the tumor has spread to lymph nodes (Stage II or II, depending on its size), the prognosis worsens, and in general "adjuvant" treatment, given even in the absence of distant metastases, is indicated, and improves the outlook. If sites of distant spread of these tumors are detected at the time of presentation (Stage IV), the tumor is likely not curable, but depending on the tumor type and the patient's ability to undergo aggressive treatment, life may be prolonged significantly. Thus patients with Stage IV (widely spread) ovarian cancer may live an average of 5 years, and some may even be cured by aggressive surgery and chemotherapy.

Overview:

The basic question posed is: Can the cancer physician reliably predict that a given cancer patient will be disabled for a period of 12 months or more (or permanently) at the time of

initial presentation for evaluation? With certain caveat's it is possible to predict that certain patients will meet this criterion of long-term disability.

The vast majority of patients with metastatic disease (those with tumor that has spread to distant sites and is no longer completely resectable surgically), will become permanently disabled, if not disabled for at least a 6 month period, at the time of presentation. There are some exceptions to this statement:

1. Some patients with breast and prostate cancer may experience long term remissions while on hormonal therapy, which has minimal side effects.
2. The majority of patients with testicular cancer and lymphomas may be cured by 4-6 months of intensive chemotherapy. During the period of treatment, they will often be unable to work. Afterward they will return to normal activity.
3. Patients with various forms of chronic leukemias and multiple myeloma, and other chronic blood tumors may experience long remissions or slow progression of disease, and may be able to carry on their work for many years.
4. Some patients with acute leukemia may experience long term remission or cure after an extended period (6 months to one year) of intensive treatment.
5. Patients requiring bone marrow transplantation for leukemia or lymphoma may be disabled by a combination of their disease and its treatment for many months, but may make a full recovery and may be able to return to work.

An important caveat to remember is the fact that, in any given patient, the outcome can never be predicted with absolute certainty. Spontaneous remissions are rare, but known to occur even in the most hopeless situations, as in patients with advanced melanoma or renal cancer, and the pace of disease progression may be unpredictably slow in patients with other kinds of cancer. Thirdly, new, experimental therapies may be discovered through ongoing clinical trials, and may dramatically change the outlooks for patients who respond. Thus, any rapid assessment of a patient's prognosis and an application for long term disability have to be based on probabilities rather than certainty.